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NEW CLAIMS:

1. Gear pump for highly viscous materials, having a housing (2) a gear section (7) having a sun wheel (14) and several planet wheels (16) disposed to be fixed at the housing, an input screw section (6) having an input screw shaft (12), which is rotationally fixedly connected with the sun wheel (14), and having an input transfer mix area (22), and an output screw section (9) having an output screw shaft (20), which is rotationally fixedly connected with the sun wheel (14), and having an output transfer mix area (25), wherein, in the transfer mix areas (22, 25), the screw shafts (12, 20) have a flight depth decreasing toward the gear section (7), and, in the housing (2, 2a, 2c), flights (23, 26) are formed which extend in the opposite direction relative to the flights of the screw shafts (12, 20), have increasing diameters toward the gear section (7) and each end between the planet wheels (16).

2. Gear pump according to Claim 1, characterized in that the planet wheels (16) are disposed in

roller bearings (18) in the housing (2).

3. Gear pump according to Claim 1 or 2,  
characterized in that the housing (2) has a first housing part  
(2a) accommodating the input screw shaft (12), a second housing  
part (2b) surrounding the planet wheels (16) and the sun wheel  
(14), and a third housing part (2c) accommodating the output  
screw shaft (20).

4. Gear pump according to Claim 2 and Claim 3,  
characterized in that the roller bearings (18) of the planet  
wheels (16) are received in the first housing part (2a)  
accommodating the input screw shaft (12) and in the third housing  
part (2c) accommodating the output screw shaft (20).

5. Gear pump according to one of the preceding claims,  
characterized in that the screw shafts (12, 20) are mutually  
connected in a rotationally fixed, preferably form-locking  
manner, and the sun wheel (14) is fitted onto one of the screw  
shafts (12, 20).

6. Gear pump according to one of the preceding claims,  
characterized in that the flight depths of the screw shaft (12,  
20) disappear toward the gear section (7).

7. Gear pump according to one of the preceding claims, characterized in that the gear section (7) has four planet wheels (16), and the housing has four flights (23, 26) respectively in the transfer mix areas (22, 25).

8. Gear pump according to one of the preceding claims, characterized in that connection ducts are constructed in the first housing part (2a) and/or in the third housing part (2c), which connection ducts mutually connect the flights (23) of the input transfer mix area (22) and the flights (26) of the output transfer mix area (25) respectively.

9. Gear pump according to one of the preceding claims, characterized in that flights (23) of the input transfer mix area (22) are spaced in the circumferential direction with respect to the flights (26) of the output transfer mix area (25).